Office of Legacy Management
U.S. Department of Energy

Program Update

January – March 2006

Welcome to the January – March 2006 issue of the U.S. Department of Energy (DOE) Office of Legacy Management (LM) Program Update. This publication is designed to provide a status of activities within LM. Please direct all comments and inquiries to LM@hq.doe.gov.

The U.S. Department of Energy (DOE) is implementing an initiative to link performance targets to budget structure and the decision-making process. In alignment with this Departmental initiative, the Office of Legacy Management (LM) has established four goals, each with its respective performance measures, to measure the organization's performance. LM's goals and performance measures can be found on the LM website, http://www.LM.doe.gov/what_is/lmgoals.pdf.

Goal 1 – Protect human health and the environment through effective and efficient long-term surveillance and maintenance (LTS&M)

Goal 2 – Preserve, protect, and make accessible legacy records and information

Goal 3 – Support an effective and efficient work force structured to accomplish Departmental missions and ensure contractor worker pension and medical benefits

Goal 4 – Manage legacy land and assets, emphasizing protective real and personal property reuse and disposition

This and future quarterly Program Updates will identify LM activities that represent our effort to achieve these goals.

Goal 3

Labor Standards Training Held in San Diego, California

LM hosted Labor Standards training for Field personnel on March 28–30, 2006, in San Diego, California. LM has the responsibility to provide labor standards training and guidance to Field personnel. The training addressed an overview of the Service Contract Act and the Davis-Bacon Act and their applicability to government contracts. Over 30 Field and Headquarters personnel attended the successful training.

Goal 1

Enhancing Natural Attenuation at Monument Valley, Arizona Site

Navajo Nation officials and DOE-LM scientists, together with University of Arizona researchers and Diné College students, are exploring natural remedies for ground water contamination at DOE's LM site on Navajo Nation land near Monument Valley, Arizona.

DOE removed radioactive tailings from Monument Valley, a former uranium millsite, in 1994. Nitrate and ammonium, used during the milling process, remain in a shallow ground water plume spreading from a millsite source. Nitrate in drinking water can be particularly toxic to infants. Soil bacteria can convert ammonium to nitrate in a process called nitrification. A conventional cleanup strategy might involve drilling wells and pumping ground water to a treatment facility on the surface. Pilot studies jointly funded by LM and the University of Arizona are exploring alternative remedies. The studies are answering two questions: What is the capacity of natural attenuation processes to remove nitrate and slow plume dispersion, and, if needed, can we efficiently enhance natural attenuation?

The answers involve plants and microorganisms. Where they haven't been overgrazed by livestock or cleared during removal of radioactive tailings, deep-rooted plants are withdrawing nitrate water from both the millsite source and the plume, converting it into healthy plant tissue. Two native, desert phreatophytes—plants that send roots into ground water—are doing most of the work: fourwing

Fourwing saltbush field planted in contaminated soil at the source of a nitrate plume.

saltbush and black greasewood. When healthy, these plants can send roots more than 40 feet into ground water, and, like so many straws, suck about 380,000 gallons of plume water and 100 pounds of nitrate (as nitrogen) per acre in a year, a process called phytoremediation. A nitrogen-15 isotope enrichment study indicates that by the time ground water approaches the far end of the plume, microorganisms will have converted nearly half of the nitrate to harmless nitrogen gas, a process called microbial denitrification.

LM pilot studies are demonstrating that enhanced phytoremediation is a less costly, less intrusive, and more sustainable alternative to conventional pump-and-treat remedies at Monument Valley. The plantings are also improving land use. Emergence of healthy saltbush and greasewood stands is restoring rangeland condition and ultimately will increase carrying capacity for livestock. Fertilized with nitrate from the plume, each fall these shrubs become laden with seed worth 10 dollars a pound or more for mine land reclamation. The LM and Navajo officials are currently exploring opportunities to help create a local enterprise that could market seed for revegetation at nearby coal mines.

Goal 2

LM Participates in Department of Labor EEOICPA Pilot Project

The Energy Employees Occupational Illness Compensation Program Act (EEOICPA) of 2000 established a program to compensate nuclear weapons program workers who suffered adverse health effects from exposure to beryllium, ionizing radiation, and other hazards in the course of their nuclear weapons program-related work. The Department of Labor (DOL) assists eligible individuals or survivors in applying for benefits under the act and issues decisions concerning whether certain employees of DOE contractors or subcontractors contracted occupational illnesses as a result of exposure to toxic substances in the work environment.

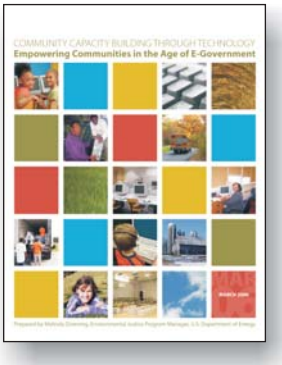
To streamline processing of EEOICPA claims, DOL developed a site exposure database to capture relevant information about DOE sites, including facilities, processes, toxic substances, and time frames during which the potential for exposure existed. Information provided by DOE to populate the site exposure database will be used by DOL to assist with adjudication of EEOICPA claims. By providing this information upfront, time and resources required by DOE to search for facility data and possible individual exposure records will be reduced.

The Rocky Flats Site was selected as the first DOE site to participate in providing information for the site exposure database. LM worked with DOL and the DOE Office of Environment, Safety and Health (EH) to facilitate this project. More than 390 boxes of records were identified by DOL and retrieved by LM site staff from the Denver (Colorado) Federal Records Center for review. The DOL project team made an on-site visit February 20–24, 2006, and determined that approximately 30,000 pages or 14 cubic feet of documents would need to be scanned and provided to DOL. Efforts are currently under way to provide these scanned images to DOL.

DOL plans to gather similar data from all the DOE sites currently processing EEOICPA requests, with two future LM sites (Fernald and Mound) scheduled for late summer 2006.

Goal 1

LM Issues Community Capacity Building Through Technology Report



The *Community Capacity Building Through Technology – Empowering Communities in the Age of E-Government* report was released in March 2006. DOE and other Federal agencies are conducting several capacity building projects around the country. This effort has now expanded to include the U.S. General Services Administration, the U.S. Department of Agriculture, Tennessee State University, DOE's Massie Chairs of Excellence, the U.S. Environmental Protection Agency, and the Fairfax County, Virginia, Office of Partnerships.

Expanding electronic government is one of the five key elements in the President's Management Agenda. A key component of each project is computer technology. Each project employs technology to facilitate planning, resource development, communication, and land project management. Each project includes online technical assistance to help community groups, small towns, and rural communities address energy, environmental, and economic development challenges.

The guiding principle of each project and its activities is to build community capacity for environmental cleanup, waste management, and sustainable development in a manner that permits the local host community to grow and develop with little or no additional DOE assistance.

Through our combined efforts, we have distributed nearly 3,000 computers to small towns and communities, and the numbers grow with each passing day. Along with these computers, we have provided training and access to technical assistance.

The report is available at http://www.lm.doe.gov/env_justice/documents/ComputerDistReport_LMWEB.pdf.

Goal 1

Community Collaboration 10 Year Celebration

For the past 10 years, DOE Headquarters, Savannah River Site (SRS) Operations Office, the U.S. Environmental Protection Agency, Westinghouse Savannah River Company, Savannah State University, and Citizens for Environmental Justice have worked in collaboration to help communities near SRS to better participate in the decision-making process of the site relative to environmental cleanup and future missions. The local communities are given access to Federal and academic experts to gain information, increase knowledge, and receive technical assistance.

Members of the partnership gathered in Savannah, Georgia, on January 21, 2006, to commemorate 10 years of successful working together. This partnership has produced numerous benefits for both the government and the community. Such benefits include communities have a better understanding of the site decision-making process, citizens have better access to experts and government decision-makers, communities and DOE have better working relationships, stakeholders have improved trust and increased credibility in government decisions, and DOE has a model program that can be replicated in other areas of the country.

Rocky Flats

Effective immediately, all requests for Freedom of Information and Privacy Act requests for Rocky Flats should be sent to

Lisa Bressler
Environmental Consolidated Business Center
Rocky Flats Project Office
12101 Airport Way, Unit A
Broomfield, CO 80021–2583

Requests can also be submitted by email:
lisa.bressler@rf.doe.gov

Goal 4

LM Land Use Map

In January 2006, LM released a national land use map of existing and proposed LM sites. The map provides information on both land use and site ownership categories. In addition, the locations of community reuse organizations are noted. All the sites are accurately located based on latitude-longitude on an Albers Equal Area base map projection.

The land use categories on the map are

- Grazing and/or wildlife
- Public park/open space
- Office/commercial/industrial
- Agriculture/managed forest/hay production
- Disposal cell only
- Land use to be determined or not applicable
- Uranium lease tracts
- Records only sites

A copy of the land reuse map can be downloaded from the LM website, http://www.LM.doe.gov/land/sites/landusesitemap200601.pdf. For further information, detailed prints, and CDs, please contact John Stewart at 301–903–7137.

Goal 4

Site Highlights

Shiprock, New Mexico Site

The construction of the two 200-foot-long floodplain collection drains was completed in March 2006. The purpose of these drains is to collect contaminated ground water for treatment in a nearby evaporation pond. The trenches, which are 12 to 14 feet below the ground surface, were constructed using guar gum to hold the excavation open. Collection drains (perforated PVC pipe) were placed at the bottom of the trench, and coarse gravel was added around the pipes. Enzymatic breaker was then added to "break" the long-chain compounds and reduce the viscosity of the guar gum. This collection system will begin operation in April 2006 after final electrical work is completed. These new collection drains are expected to significantly increase the volume of contaminated ground water being treated at this site.

Pinellas, Florida Site

Significant progress was made during this quarter toward cleanup and closure of contaminated areas at the Young - Rainey STAR Center site by utilizing ground heating combined with injection of hot water and steam for contaminant extraction. This project reached maximum ground temperature during this quarter and contaminant extraction will continue into the next quarter. Both the 4.5-Acre Site and the Waste Water Neutralization Area (WWNA) were given regulatory approval to stop pump-and-treat activities on December 20, 2005, and entered into a ground water "monitoring only" phase of cleanup operations. It is expected that these two sites can be closed, with institutional controls, by fiscal year 2009. In addition, DOE is currently evaluating a recently received private developer's request to allow commercial use of the 4.5-Acre Site for vehicle parking. At the Building 100 site, work started on a Corrective Measures Study Addendum. This report will evaluate whether it is feasible to attempt further remediation at Building 100 and also evaluate the effectiveness of the existing extraction and treatment system. The frequency of site-wide sampling has been reduced from quarterly to semiannual, and the first implementation of the semiannual sampling was completed in March.

Uranium Leasing Program Programmatic Environmental Assessment

The preliminary draft Uranium Leasing Program Programmatic Environmental Assessment (EA) was reviewed by three "Cooperating Agencies" in accordance with the National Environmental Policy Act (NEPA). Comments were received in March and are being evaluated. The U.S. Bureau of Land Management had extensive comments. In addition, LM has initiated consultation with five Tribal Nations who historically inhabited the region involving the Uranium Lease Tracts. Once tribal concerns are resolved and Cooperating Agency comments are taken care of, the draft EA will be reviewed by an internal LM NEPA Planning Board to ensure that the draft is ready for public review. Public review will last for 30 days and will involve public meetings. It is anticipated that the public review will occur in summer 2006.

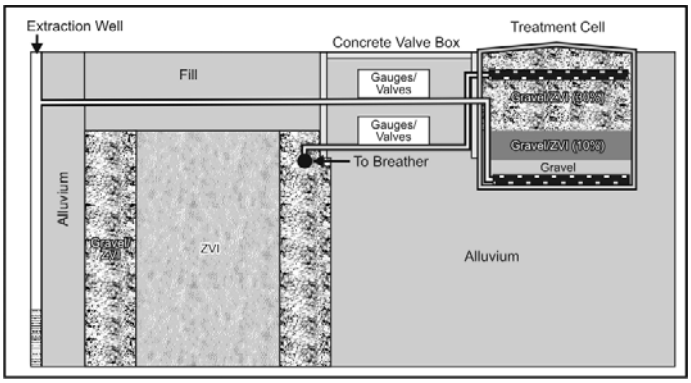
March 2006 public meeting in Riverton, Wyoming

Riverton, Wyoming Site

A public meeting was held near the Riverton, Wyoming, site to discuss progress of ground water remediation and institutional controls and to provide information about the protectiveness of the alternate water supply system in place on the Arapaho/ Shoshone Reservation. In spite of a major snow-storm, the meeting was well attended. Progress continues with the tribes to finalize institutional controls and to ensure that the water supply system is operating as intended.

Monticello, Utah Site

DOE-LM activities associated with the Monticello Site have been included in a book that was just published by CRC Press: *2006, Barrier Systems*



Monticello treatment cell design

or Environmental Contaminant Containment and Treatment, by C. C. Chien, H. I. Inyang, and L. G. Everett (eds.). The book resulted from a workshop sponsored by DOE, the U.S. Environmental Protection Agency, and DuPont held in 2002. The book discusses state-of-the-art practices in covers, caps, impermeable barriers, and permeable reactive barriers (PRBs). LM's contribution included a reaction-path modeling approach used in conjunction with field data from a detailed coring program (70 cores) to estimate average ground water flow rate through the PRB. Analysis of core samples indicated that most of the uranium resided in a zone containing a mixture of gravel with zero-valent iron (ZVI) and that very little uranium was contained in the 100% ZVI zone. In contrast, calcium was deposited in both the gravel/ZVI and ZVI zones. Masses of calcium and uranium in the PRB were 1,600 and 11.4 kilograms, respectively. The ground water flux was estimated at 24 liters per minute, considerably less than the design flux of 189 liters per minute. This widely distributed book highlights the investigation LM conducted at the Monticello PRB. PRBs are rapidly becoming one of the most accepted methods for ground water remediation, and the investigation at Monticello provides one of the best sets of data available with which to evaluate long-term performance and cost efficiency. In addition to the Monticello site, LM currently operates PRBs (or ground water treatment cells using similar chemistry) at the Rocky Flats and Durango, Colorado, sites, and anticipates some future sites that will eventually transition to LM will have PRBs.

LM Public Document(s) Request Form